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Citrus Coder Cuts Costs

By Dale Anderson and Paul Shaffer

An effective and simple method for individually coding grapefruit and oranges--usually a time-consuming chore in self-service food stores when different sizes or types of the same fruit are offered for sale--has been developed by marketing research specialists of the U. S. Department of Agriculture.

This new method uses a piece of equipment which is called a "citrus coder" by its developers. In store tests, the citrus coder coupled with better handling techniques, cut in half the time normally required to code (mark) and display citrus.

The new equipment is another example of results of USDA marketing research seeking ways to reduce the cost of retailing. Development of the citrus coder was the result of one phase of an overall study being made by the Transportation and Facilities Branch of the Agricultural Marketing Service to lower handling costs in the produce and other departments of retail food stores.

Citrus Differs By Type And Size

During the citrus season, a self-service store commonly stocks 2 or 3 sizes of grapefruit in both white and pink types. At the same time it will stock several sizes of oranges of different types. When these fruits are sold from bulk displays it is necessary to code (mark) the individual items. Unless they are individually marked check-out operators are unable to correctly identify and price the citrus fruit. The mark or code may be in the form of lines or crosses, or may be alphabetical or numerical.

The typical price coding operation studied was as follows: One or more crates of citrus were loaded on a stocking truck and moved to the display area. Each row in the crate was then marked with a crayon or grease pencil, an adjustable stamp, or a self-inking porous tip stick stamp (figure 1). After each row was coded the units were placed on display (figure 2). Each piece of citrus was handled twice--coding and displaying. Labor requirements varied according to the number of units per crate, the type of coding equipment, and the methods used. When good handling methods were used the self-inking stick stamp was slightly faster than the band-type adjustable stamp. It was 14 percent faster for grapefruit and 23 percent faster for oranges than a crayon or grease pencil (See chart at end of article). For this study it was assumed that the average citrus crate contained 72 grapefruit or 240 oranges.

Figure 1.--Price coding citrus with band-type adjustable stamp at the display counter.

Figure 2.--Placing citrus on display using conventional method of moving coded fruit to display by hand.

Some operators code citrus by hand in the backroom to avoid displaying each unit separately and to reduce the congestion in front of the display area while the citrus is coded and displayed. Two 1-1/8-bushel apple boxes were positioned adjacent to a full crate of citrus on the stocking truck. After each row of citrus was coded the units were put in the box. Two 1-1/8-bushel boxes, such as eastern apple boxes, will hold a full crate. Smaller size boxes will not permit the double stacking of full boxes unless more than two boxes are used per crate. The citrus may either be coded in advance of requirements and placed in storage or may be moved directly to the display area. The display operation consists of dumping the boxes on the display fixture (figure 5). Regardless of whether the citrus is coded at the display area or in the backroom, there is little difference in the time requirements. Coding by hand in the backroom is on the average 8 percent more productive than the conventional method for handling oranges but is 4 percent less productive for handling grapefruit.

Equipment Speeds Coding

The citrus coder was developed to eliminate the necessity of individually coding by hand each citrus unit. The coder consists of a hopper, into which the crate of citrus is dumped and a cradle, mounted on wheels, in which the hopper is positioned (figure 3). Incorporated in the hopper and extending beyond the hopper are two parallel grooves which serve to track the citrus individually over the coding device. This device consists of two individual stick-type self-inking stamps which are placed in recessed holes at the discharge end of each track. As each piece of fruit comes down the groove an impression is made on it as it rolls over one of the self-inking stamps. The hopper and the extending tracks are adjust-

Figure 3.--This is the citrus coder. Black dots at lower end of troughs are stick-type stamps.

Figure 4.--Citrus coder in use. Boxes to catch fruit probably should be raised to reduce bruising possibility.

able so that the correct pitch for the citrus can be provided. For example, 46 and 54 size grapefruit require a steeper pitch than a size 288 orange.

As in backroom coding with conventional hand coding methods two apple boxes of 1-1/8-bushel capacity were used for each crate of coded citrus. This type box is recommended because: (1) The produce department normally has an ample supply of these boxes; (2) they can be double stacked; and (3) they have a wood strap across the two ends which provides a convenient handhold. The two empty boxes are placed side by side on the floor at the discharge end of the citrus coder chutes. A full crate of citrus is placed diagonally on the hopper as illustrated in fugure 4. As the operator dumps the citrus in the hopper he watches for poor quality or off-size citrus and removes them as they roll down the chutes. An approximately equal amount of citrus should be dumped into each of the two chutes. The amount of citrus in each of the two apple boxes is then equalized and the boxes are stacked on a skid or truck ready to be taken for displaying.

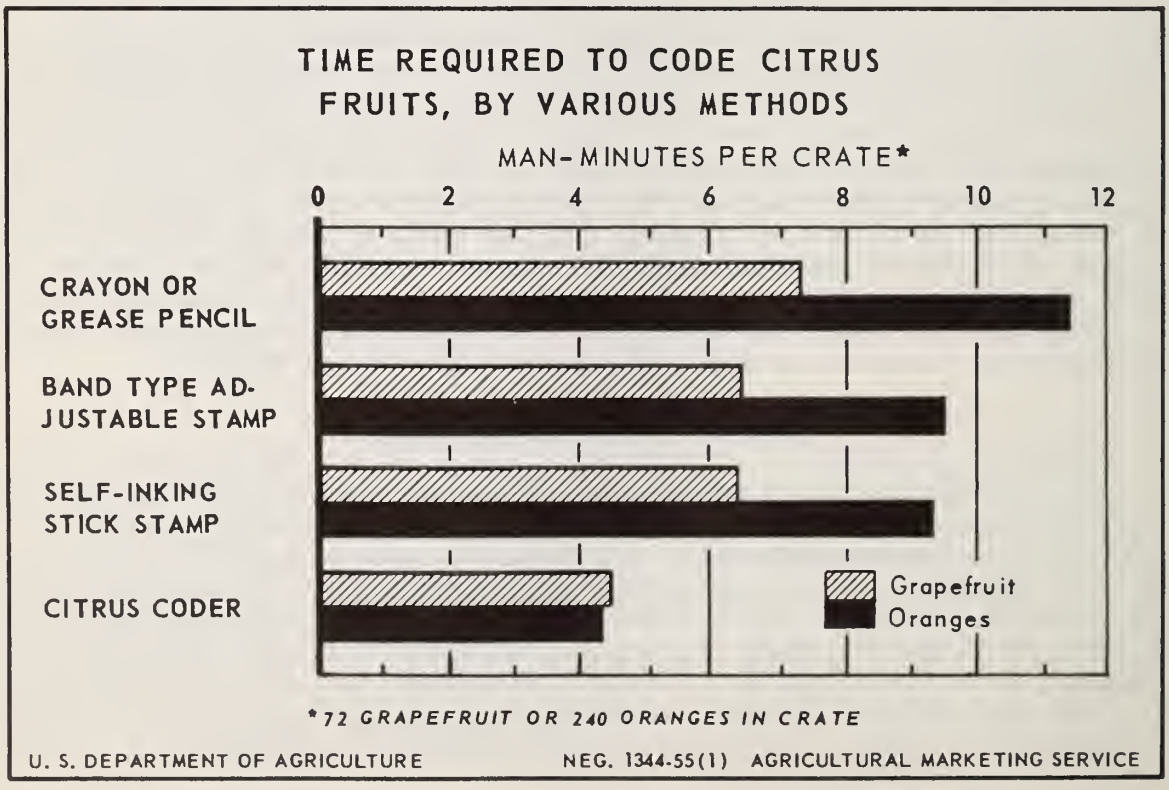
Different Codes Can Be Used

The code stamped on the citrus may either be numerical or alphabetical. In this study two sets of self-inking stamps from "0" through "6" were used. This provided a code for a maximum of 7 types and sizes of grapefruit or oranges. If an alphabetical code is desired it is suggested that such letters as A, I, O, S, X, and W be used in order to minimize questions regarding the correct code. It is not recommended that the actual price be placed on each unit since it would be necessary to show whether the price is per unit, per $\frac{1}{2}$ dozen, or per dozen and would require large sets of self-inking stamps to handle all possible price variations.

Figure 5.--Coded citrus is taken to display area and *dumped*.

To insure maximum productivity in the use of the citrus coder, it is suggested that the entire day's receipts be coded at one time. This eliminates setup and cleanup time which otherwise would occur when each case is handled individually. For example, when the crates of citrus are processed individually, it is necessary to position the coder, obtain and ink the stamps, and put away the stamps and coder for each crate handled.

The labor requirements for the complete handling of a crate of grapefruit using the citrus coder and dumping the grapefruit on the display are 4.54 man-minutes (See chart below). This method of handling grapefruit is 60 percent more productive than the current typical method (code with crayon or grease pencil at display area and place on display by hand) and 40 percent more productive than the most productive of the conventional methods (code with self-inking stick stamps and display by hand). The use of the citrus coder for handling oranges required 4.56 man-minutes per crate which was 158 percent more productive than the typical method as noted above and 110 percent more productive than the most productive of the conventional methods. Plans for the coder are available through the Transportation and Facilities Branch, Agricultural Marketing Service, USDA.



Spud Sprouting Stymied

By Dr. Herbert Findlen

An effective method of checking sprouting in late-crop Irish potatoes - a serious problem to the industry during the latter part of the marketing season - has been developed through recent research by the U. S. Department of Agriculture. Tests of the new technique indicate that through its use the marketing season for late-crop potatoes probably can be extended up to a month, even when temperatures average as high as 59 degrees, Fahrenheit.

The sprout preventative or inhibitor - a low concentration of methyl ester of alpha naphthaleneacetic acid (commonly referred to as MENA) in a water and wax emulsion - was developed during experiments to determine the efficiency of that chemical and certain others in retarding potato sprouting. The research was conducted by the Red River Valley Potato Research Center at East Grand Forks, Minn., which is under the Biological Sciences Branch of the Agricultural Marketing Service.

Sprouts Lower Quality And Value

During the latter part of the late-crop potato shipping season, sprouts often develop on table stock potatoes - particularly in transit - to such an extent that they detract from the general appearance of the potatoes at terminal markets and reduce their value. Because the potatoes have completed their rest period, sprouting is influenced to a considerable degree by the higher temperatures encountered in storage and transit at this season.

A treatment which would prevent sprouting of potatoes after grading and packing would be of considerable value to shippers, distributors and consumers. It would extend the marketing season for the late crop for shippers and would provide consumers with a better product since reducing sprouting also would cut both weight loss and shriveling.

Considerable research - dating back to 1939 - has been devoted to the development of such a treatment for potatoes. At that early date, it was found that MENA did a good job of checking sprouting. The chemical is volatile at room temperatures and the MENA vapor is absorbed through the skin of uncut potatoes.

Following this discovery, many investigators gave attention to the problem of preventing sprouting in potatoes by chemical means. Many of these studies indicated that the application of MENA to potatoes in an inert dust carrier was the best method of treatment. However, the method did not catch on and only limited commercial use has been made

Figure 1.--Red Pontiac tubers treated with MENA incorporated in aqueous wax emulsion on March 9 and stored at an average temperature of 59° F. until April 7, 1950. 1, wax only; 11, MENA at 17 mg./kg. of potatoes.

of this dust treatment technique.

A somewhat more limited amount of research work has been done on the application of MENA and other sprout inhibitors applied to potatoes in water and wax emulsions. While results of this work varied, generally, the sprout retarding properties of MENA were substantiated.

Another sprout inhibitor showing great promise - 3-chloro-isopropyl-N-phenyl carbamate (3-Cl-IPC) - has recently been tested by Department research personnel. Results of this work should be available soon.

The research on MENA discussed here was undertaken to determine its relative merits as a sprout retardant as compared with alpha chloronaphthalene, alpha terpineol, and the diethanolamine salt of maleic hydrazide (also referred to as MH). Several different concentrations of each of the chemicals were used in preparing aqueous solutions or emulsions for use in the studies.

Experimental lots of potatoes - 10 tubers of approximately the same size were used. Varieties tested were Triumph, Pontiac, and Red Pontiac. The potatoes had been stored for several months in a commercial storage house, where the temperature had been gradually lowered and then maintained at 36 to 40 degrees F.

The various lots of potatoes were dipped in or brushed with the liquids containing the various chemicals tested; then were dried at room temperatures, placed in double-walled baggs and stored at an average temperature of 59 degrees F., with average relative humidity of 61 percent.

After storage for approximately 1 month at this average temperature, the potatoes were removed and weighed; then the sprouts, if any, were removed and weighed. Weight loss was calculated as percent of original tuber weight.

Several treatments were tested. In one, Red Pontiac potatoes were used to compare the effectiveness of alpha terpineol and alpha chloronaphthalene with MENA in checking sprouting of dormant potatoes when the chemicals were used in a wax emulsion. (Results of this test are shown in Figures 1 and 2, above and following page.)

Another test covered the treatment of dormant and non-dormant

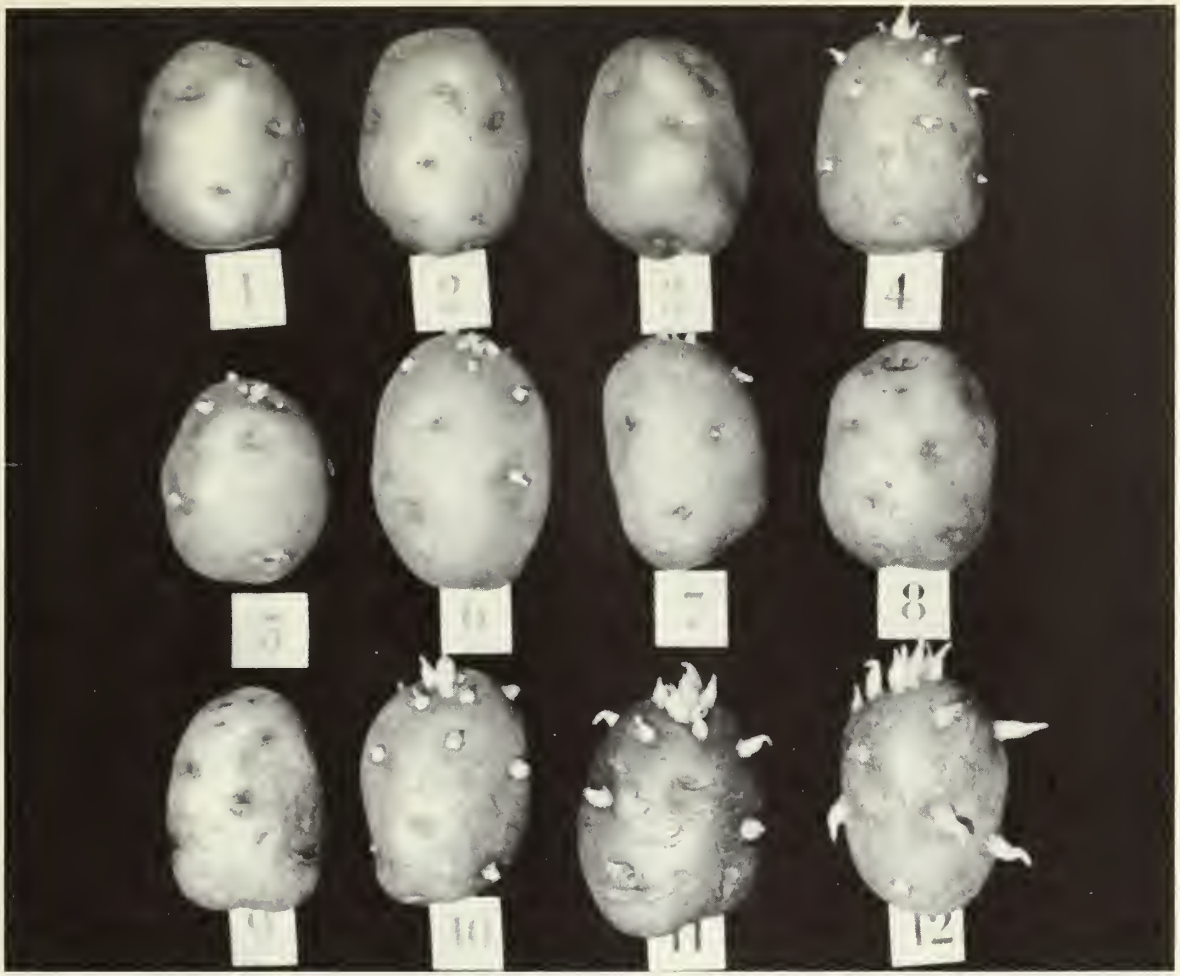


Figure 2.--Typical tubers of the Red Pontiac variety of potato showing amount of sprout inhibition attained when they were treated with several different chemicals in wax and stored at an average temperature of 59° F. from March 9 to April 7, 1950. 1, MENA at 17 mg./kg. of tubers; 2, MENA at 33 mg./kg.; 3, MENA at 67 mg./kg.; 4, alpha terpineol at 50 mg./kg.; 5, alpha terpineol at 100 mg./kg.; 6, alpha terpineol at 200 mg./kg.; 7, alpha chloronaphthalene at 50 mg./kg.; 8, alpha chloronaphthalene at 100 mg./kg.; 9, alpha chloronaphthalene at 200 mg./kg.; 10, wax plus acetone; 11, wax only; 12, untreated.

potatoes with low concentrations of MENA in a paraffin-base wax. The lowest concentration of MENA which was entirely satisfactory in checking sprouting in both dormant and non-dormant tubers in this test was 17 milligrams of the chemical to 1 kilogram of potatoes. This solution, equivalent to a 2.1 percent aqueous emulsion applied at the rate of 1 gallon to 10,000 pounds of potatoes, was the most efficient emulsion tested. (Some results of this test are shown in Fugure 3.)

In the third test, a water emulsion of MENA, a water and wax emulsion of MENA, and a water solution of diethanolamine salt of MH were compared. Here again, the MENA in water and wax emulsion was the most effective treatment. Potatoes treated with wax plus MENA lost significantly less weight from sprout removal than those treated with just water emulsions of MENA, with odds greater than 99 to 1. MH in a water solution,

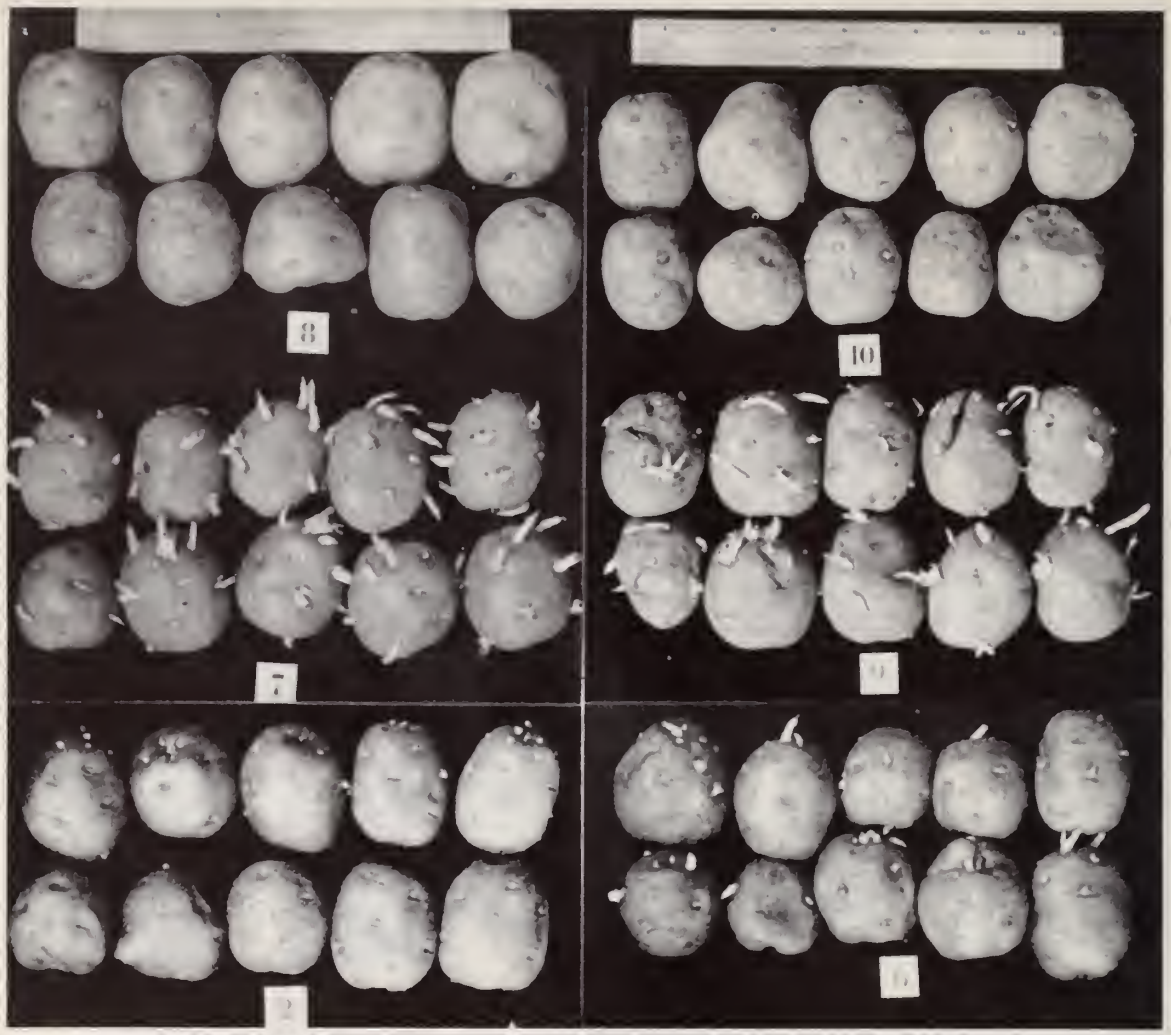


Figure 3.--Dormant and desprouted non-dormant potatoes of the Triumph variety treated with MENA incorporated in aqueous wax emulsions. 2, 7, and 8, tubers dormant at time of treatment; 6, 9, and 10, non-dormant tubers from which sprouts were removed prior to treatment; 2 and 6, commerical sprout-inhibitor wax applied at the rate of 800 mg./kg. of potatoes; 7 and 9, untreated; 8 and 10, MENA at 17 mg./kg. of potatoes in paraffin-base aqueous wax emulsion.

applied as a dip, proved ineffective in retarding sprout growth even at the highest concentration used.

Briefly, the tests showed that for a month, at an average temperature of 59° F., excellent results in checking sprouting in Triumph and Pontiac potatoes were obtained from the use of MENA at the rate of 17 milligrams to 1 kilogram of potatoes. Very effective on unsprouted potatoes, this treatment also was satisfactory for desprouted tubers. It was more effective in aqueous wax emulsion than in water alone. Alpha terineol retarded sprout growth to some extent, but was far less effective than MENA. Alpha chloronaphthalene in a water and wax emulsion almost completely prevented sprouting, but caused some injury to potatoes. It may be suitable for treating potato dump piles to prevent spread of late blight. MH in water was ineffective in checking sprouting.

Smokey Bear Aids Milk Drive

By Lynn Kennon

Smokey Bear, the celebrated symbol of forest fire prevention, lends his talents to another kind of conservation campaign--aimed at increasing milk consumption by children--in a television film just released by the U. S. Department of Agriculture.

The film, "A Toast To Smokey," is part of an industry-government program to ease milk marketing problems by boosting consumption. The program has a two-fold purpose: Increasing children's milk use makes an important contribution to their health, both now and in the future as they benefit from the milk-drinking habit; and the dairy industry benefits as current marketing problems ease and future market expansion is encouraged as children drink more milk.

Department marketing specialists asked Smokey to help in this campaign because of his popularity and proven powers of persuasion. His activities are controlled by an Act of Congress in behalf of forest fire prevention. The importance of the milk program's success in conserving the nation's human resources by building up children's health, and in making the best possible use of the nation's abundant milk supply, led Administrators of the Smokey Bear Act to authorize Smokey's participation in the campaign.

Parallet Between Children and Trees

In "A Toast To Smokey," the famous bear urges children everywhere to drink more milk. He points out that both little trees and children need protection from harm and nourishment to help them grow. Drinking plenty of good, fresh milk, he explains, helps children grow big and strong just as preventing fires helps little trees grow big and strong.

Smokey has become a favorite of children throughout the country. They consider him a close personal friend, and he has found them a staunch ally in his campaign against forest fires. In a recent article about Smokey, a member of the Forest Service quoted a mother who wrote of her little daughter: "... heaven help the individual who throws matches and cigarettes out of car windows. To my consternation and amusement, she tells the individual off. I notice that these persons don't do it again in her presence..."

Through the years, Smokey's fame has spread as the "forest fire preventin' bear" -- and as a trademark of the Cooperative Forest Fire Pre-

vention campaign sponsored by the Advertising Council and conducted by USDA's Forest Service and State Forestry Departments.

The symbol became reality about five years ago, when a crew of fire fighters found a tiny black bear cub in the ruins of a forest fire that ravaged Lincoln National Park in New Mexico. The forlorn cub, hair singed and paws burned, was taken to Santa Fe for treatment. Pictures of "Smokey," bandages swathing his paws, touched the hearts of millions of newspaper readers.

Given Credit For Forest Fire Decline

When Smokey recovered from his burns, he was flown to Washington, D. C., where he was given a home in the National Zoo. There he was formally presented to the youngsters of America. Since then, Smokey has become a model for posters and cartoons, a movie actor, a radio and television personality, and a constant reminder of the need to be careful with fire. Forest Service officials give him major credit for the 18-percent drop in forest fires from 1952 to 1953.

"A Toast To Smokey" is a one-minute film designed for use by television stations either as a spot announcement or for inclusion in children's programs. The National Dairy Council, a producer-supported dairy promotion organization, has arranged for a full-color version of the film. This will be available for circulation through the Council's film library service and for color television use.

Production and distribution of the film continues the industry-government effort to boost milk consumption as a solution to current dairy marketing problems. Milk production on farms during 1954 reached an estimated 123.8 billion pounds. That's 2 percent more than the previous high of 121.2 billion pounds produced in 1953 and over 7 billion pounds more than the 1943-52 average of 116.4 billion pounds. Production has passed its normal low point for the season, and will be on the increase during the spring.

New Phase of Industry-Government Cooperation

The Smokey film is the first food-promotional film made for television use under a new form of arrangement which provides for "cooperative agreements" between private groups and federal agencies in the production of such films. The film thus sets a pattern for cooperative effort--with the Department providing its facilities and information, and industry bearing appropriate costs--to take full advantage of television's potential as a means for informing consumers about abundant food supplies.

The Department will distribute the black-and-white version of "A Toast To Smokey" to some 425 television stations throughout the country, urging them to use the film as a public service. Meanwhile, the National Dairy Council's 81 offices across the country are actively promoting the color version to make the most of its message on milk usage and forest fire prevention.

Mechanized Handling Speeds Egg Marketing

By F. Z. Beanblossom and N. G. Paulhus

The marketing of high quality eggs requires a quick and efficient method of handling from producer to consumer. What would you think of a 24-hour service for this operation which includes assemblying, candling, grading, packing, transporting over 100 miles and distributing to retailers from a chain-store warehouse? Through the use of "production line" candling and packing systems and mechanized handling operations, they're doing this in some plants in Texas.

Demand for top quality eggs in Texas resulted in the development of an egg quality program. This was accomplished through the cooperation of industry members and the poultry marketing specialist of Texas Agricultural and Mechanical College. Larger returns to producers, economic gains for handlers and the greater satisfaction of consumers increased the volume of top quality eggs moved under the program. The larger volume has permitted the introduction of efficient mechanical handling equipment and methods. The end result is a low-cost, direct and rapid system of handling which provides retail outlets with top quality eggs in a minimum of elapsed time.

Some large food distributors in Texas interested in marketing quality eggs decided that a direct integrated system of egg handling would best serve their requirements. After discussing the requirements of a quality egg buying program with the college specialist, egg assembly plants were established in large producing areas. The buying of eggs on a grade and quality basis encouraged producers to increase their laying flocks. As a result, the increased production of quality eggs was overwhelming. The large volume of eggs enabled the assembly plants to install mechanized candling and cartoning production lines to improve their operating efficiency. At the same time improved mechanical handling equipment was introduced to reduce handling operations during the normal sequence of plant operations.

Candling production lines have work stations for several candlers. Cases of eggs, many of which are delivered to the plant by producers, are fed to the candlers on gravity conveyors. These conveyors terminate at a roller ball table which serves candlers. Each candler then sorts eggs according to quality, grade, and size classes. Top quality eggs are packed directly into one-dozen cartons and the remainder are packed in flats and fillers. Cartoned eggs are then transported to the packing table by a conveyor belt. A Federal resident grader continuously checks the quality of cartoned eggs to insure conformity with the rigid quality standards adopted by the management.

Figures 1 and 2.--Pictured on this page is the basic egg handling equipment described in the article - the mechanical low-lift electric truck, above, and the loading skids, below. In the lower picture, a skid load of eggs (16 cases) in producer cases, is ready for moving to candling area.

The packing operation consists of transferring cartoned eggs from a rotary packing table into cases. One firm uses heavy wood cases to deliver eggs directly to retailers. The cases are returned for re-use. These special heavy duty cases are made of sawn lumber with detachable covers (figs. 3 and 4). Although these delivery cases are more expensive at the outset, they are more economical in the long run and provide greater protection to cartoned eggs during handling. Twenty-four one-dozen cartons of eggs are packed in a case and the lid is snapped on with metal fasteners. The full cases are then stacked on a dead skid until a full load of 24 cases is accumulated.

Figure 3.--Skid load of candled and cartoned eggs in wood shipping cases moving to truck loading platform.

Skid loads of cased eggs are then transported to the refrigerated cooler by means of a mechanical low-lift electric truck. All cased eggs are transported to the cooler in skid loads as soon as they are candled and packed. In the late afternoon the skid loads of eggs are transported from the cooler to refrigerated trucks at the loading platform. One man with an electric low-lift truck can load an entire truck-trailer load of eggs in a few minutes. Each skid load of eggs (24 cases) is positioned in the truck in a regular loading pattern (fig. 5). When full, the loaded refrigerated trailer truck transports the eggs to the distributing warehouse, 100 miles away.

Unloading operations consist of transporting skid loads of eggs from the trailer-truck to the cooler room of the distributing warehouse. When empty, the trailer-truck is reloaded with empty egg cases, which also are stacked on skids. The electric-powered, low-lift truck permits one man to unload the full cases and reload the truck with empty cases within a very short time. The truck trailer then returns to the egg assembly plant where the skid loads of empty containers are unloaded and placed in temporary storage until needed. The complete cycle of operations is then repeated the next day.

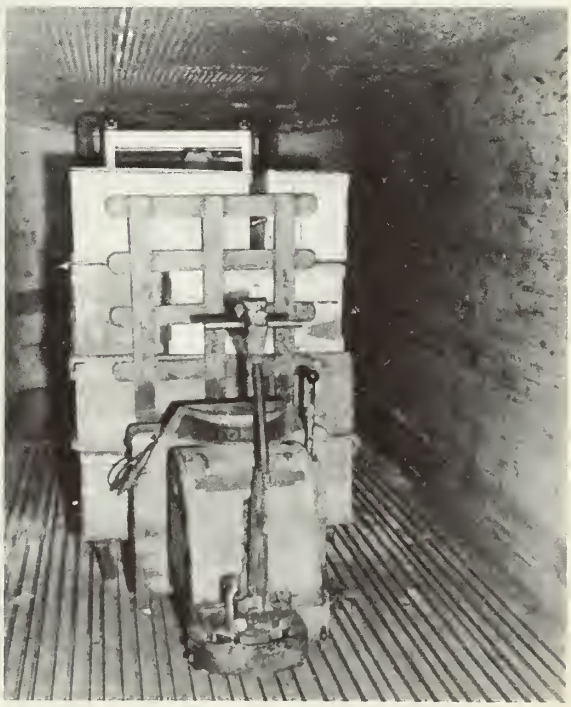


Figure 4.--Same load of candled and cartoned eggs being positioned in refrigerated trailer truck.

In addition to the handling of

quality eggs, this firm which has mechanized its operations, also dresses poultry. The dressed, iced poultry is packed into aluminum containers which also are stacked on skids (fig. 6). These skid loads are held under refrigeration until loading out time in the afternoon. In loading out, skid loads, consisting of 20 containers, are transported from the cooler directly into the refrigerated truck by means of the low lift truck. Only one man is required for the loading out and unloading operations in the warehouse. The empty containers are nested inside each other and about 60 can be stacked on a skid for the return trip to the assembly plant. Because of this, truck space is available for the handling of supplies or other pay loads on the return trip, providing further economies in the handling operation.

Figure 5.--Skid loads of eggs in partially loaded refrigerated trailer truck to show loading pattern.

The completely mechanized grading, packing, and handling operations in this plant have lowered handling costs considerably. The elapsed time required to market eggs-from producer to the retail store-has been reduced to a matter of hours. Often, producer-delivered eggs are graded, packed, and delivered to retail stores within a 24-hour period. This in itself is an outstanding accomplishment in view of the numerous grading and handling operations required for egg marketing.

Figure 6.--Skid loads of iced eviscerated broilers in partially loaded refrigerated trailer truck.

Many egg plants face production and marketing problems which are limiting factors in their operations. Careful analysis of operations and handling methods, however, can lead to the adoption of improved techniques which will increase efficiency and reduce costs. Particular attention should be given mechanized candling and packing equipment and powered handling equipment. Mechanization results in less handling, which means less breakage. Proper equipment and handling methods offer great possibilities for reducing marketing costs and at the same time make available a better quality product for consumers.

Hauling Of Appalachian Apples

By Clem C. Linnenberg, Jr.

A recent study by the U. S. Department of Agriculture shows how the apple shippers of one part of the country decide between rail and truck transportation. The shippers' ideas are covered in a report called "Transportation of Apples in the Appalachian Belt." The Appalachian apple area is made up of Pennsylvania, Maryland, West Virginia, and Virginia. In 1952 this area sold 18 million bushels of apples. Ten million bushels went to the consumers as fresh apples. The other 8 million were sold to processors, to be made into apple sauce, vinegar, and so on.

The bulk of the apple crop in these States is raised in a narrow band of mountain country and neighboring uplands, stretching 500 miles from eastern Pennsylvania, southwestward to the Virginia-Kentucky border. Here the Department made its study, with the help of growers, other shippers, truckers, and railroad people.

Shipment Is Mainly By Truck

Most Appalachian apples are shipped to the eastern half of the United States. One fourth of the crop is shipped to places less than 100 miles away. The Appalachian apple growers are lucky in being near the most densely populated parts of the country.

Nearness to markets helps explain why 9 bushels of Appalachian apples go to market by truck for every bushel that moves by rail. On hauls of less than 100 miles, all apples moved by truck in 1952. When the apples moved 500 miles or more, the railroads got 22% of the tonnage.

What's Better about Trucking

The Department asked shippers why they prefer trucking to rail shipment, and also the other way around. The advantage of trucking that they mentioned most was faster service. On the trip from Winchester, Va.--"capital" of the Appalachian apple country--to Baltimore, a distance of 100 miles, the fastest shipping time by rail was five times the average shipping time by truck. From Winchester to New Orleans, a distance of 1,100 miles, the figures were 60 hours by rail and 40 hours by truck. It is factors like this which make it out-of-date to talk of trucking as if it were useful only on short runs.

Layover time is a specially serious problem for the railroads in hauling freight out of a town that is served only by branch lines--Winchester's plight. Switching also is a time-eater, even in a rail haul between two cities on a main line. These are handicaps which the

railroads have not been able to offset even on the runs from Winchester to New Orleans and Miami, where long hauls on main lines give some chance to make up for these delays. In marketing a product which is perishable and subject to quick price changes, speed is important.

The shippers said that truck service was faster than rail service in still another way. Rail cars sometimes have been spotted for loading 24 to 48 hours after the promised date. Trucks were usually ready to load on a few hours' notice. Buyers in Georgia can place orders with Winchester shippers on Wednesday for truck delivery in a Georgia market on Friday morning.

Trucks Have Lower Rates

Although speed was what the biggest number of shippers spoke of, in saying why they preferred truck service, lower rates got the second-biggest vote of thanks. The Department of Agriculture took a look at the truck and rail rates from Chambersburg, Pa., to 23 points. To five towns, the railroads offered lower rates. To the rest, the truck rates were lower--even to some distant points such as Tampa.

Among the shippers who sent their apples to market in their own trucks, some spoke of the profit they made from trucking operations. Sometimes, this meant profit from a back-haul; other shippers meant that buying and operating trucks cost less than paying freight charges to a railroad.

Other reasons why the shippers preferred trucks to railroads were: Trucking involves less handling, as rail shipment means shifting a cargo from local trucks to rail cars and again to local trucks at destination; and handling of perishables is always a costly item. Trucks can be used for fairly small shipments (a full load on a not-very-large truck) or for big shipments (a full load on one or more trucks). But a rail carload is more apples than many a shipper has a buyer for, at any given market. It also might weaken the market if he did sell that many apples at one place, all at one time.

Of the shippers who said which method of transport caused the greater loss and damage, there were four who said "railroads" for each who said "trucks". The trucks had this good record because of speed (less time for damage from heat); because the apples were handled less; and--according to some shippers--because truckers handled the fruit more carefully on the way.

Shippers also liked the more flexible stop-off service of trucks, for splitting a load among several buyers. They praised the truckers' prompter payment of damage claims. This promptness is easy for a trucking firm, which is usually a small outfit--maybe even one-man. Bigness leads to red tape. Smallness avoids it.

What's Better About Rail Shipment

The remarks of the Appalachian apple shippers about trucking were

divided between "for" and "against" about as you would expect from the share of the crop shipped by truck and the share hauled by rail. Still, there were some who expressed strong preferences for rail shipment. The main point which these people stressed was that truckers are less reliable. "You have to wet-nurse the truckers," they said. For example, one trucker--arrested for having an overloaded truck--did not merely dispose of the excess apples, but got rid of the whole load by sending it to the consignee by railway express, c.o.d. The shipper had to reimburse the consignee for the extra transportation cost; and he has never gotten this money out of the trucker. Such a performance may be rare, but it leaves a sour taste.

Among the few shippers who said that loss and damage were worse in trucking than in rail shipment, there were complaints of bruising--from loading bushel baskets as much as 6 deep. Poor refrigeration or ventilation was also mention as a cause of loss and damage.

Although the Appalachian apple crop is mostly marketed nearby, one out of seven apple shippers in the area sold at least a part of his apples in 1952 in the export trade. There were complaints that, for shipments to the ports, trucking is not satisfactory. For instance, a shipment of apples may have to wait a week in the port city for a vessel. A rail car loaded with apples can be kept on the siding and re-iced from time to time. In the swift tempo of trucking, a quick turn-around is the regular way of doing business. The trucker wants to get rid of the apples and be on his way. The railroads' leisurely pace and big organization both have some good features.

The truck rates on apples--a farm product--are unregulated. Hence, they vary between shippers. A few shippers by truck complained of being unable to offer a delivered price on apples which would meet the price offered by competitors who got a better bargain on truck rates.

Better Informed Carriers Means Better Service

Studies like "Transportation of Apples in the Appalachian Belt" are intended by the Department of Agriculture to be of help by telling the rail and motor carriers what the farmers and other shippers think is good about their service and their charges, and what can stand improvement. If the railroad and trucking industries each learn what the shippers like about it and what they prefer in the other mode of transport, each of these two industries can try to increase its share of the traffic by doing whatever is practical toward meeting the shippers' complaints and matching the service and rates of the rival form of transport. Representatives of both rail and motor carriers have shown a keen interest in the report discussed here. If they try to help themselves by making use of the report, farmers, distributors and consumers will benefit.

Single copies of this report, "Transportation of Apples in the Appalachian Belt," by James R. Snitzler, Transportation Economist, Transportation and Facilities Branch, AMS, may be obtained free from the Marketing Information Division, AMS, U. S. Department of Agriculture, Washington 25, D. C.

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The "About Marketing" section formerly carried on the final pages of MARKETING ACTIVITIES has been discontinued. A complete monthly "Checklist of Reports and Charts Issued by the Agricultural Marketing Service," is obtainable from the Administrative Services Division, Agricultural Marketing Service, U.S. Department of Agriculture, Washington 25, D. C.

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